## REMARKS/ARGUMENTS

Claims 1-5 are pending herein. Claim 1 has been amended hereby as supported by paragraphs [0004] and [0015] of the substitute specification filed on June 17, 2002, for example. Claims 2, 4 and 5 have been rewritten to correct minor matters of form and for clarification purposes only. Applicants respectfully submit that no new matter has been added.

1. Applicants appreciate the PTO indicating that claims 2-3 would be allowed if rewritten in independent form. Applicants respectfully submit, however, that independent claim 1, from which claims 2 and 3 depend, is in condition for allowance for the reasons explained below, and that claims 4 and 5 also depend indirectly from claim 1. Accordingly, Applicants respectfully submit that all claims pending herein are in condition for allowance and respectfully request that the PTO issue a Notice of Allowance for this application in due course.

2. Applicants appreciate the PTO acknowledging that claim 1 is generic. Since claim 1 is generic, and in condition for allowance for the reasons explained below, Applicants respectfully request that withdrawn dependent claims 4 and 5 be rejoined, reconsidered and allowed, as well.

3. Claim 1 was rejected under §102(b) over Inoue. Applicants respectfully traverse this rejection.

Independent claim 1 recites an absolute value calculating element comprising electrostrictive elements and a detecting means for detecting the amount of deformation of the electrostrictive elements. An alternating-current signal is calculated into an absolute value and output by impressing the alternating-current signal to the electrostrictive elements to deform the electrostrictive elements and by converting a distortion of the electrostrictive elements into a direct-current electric signal using the detecting means.

The PTO asserted that Fig. 4 of Inoue "discloses an apparatus having an alternating signal (150) and impress alternating signals to electrostrictive elements (101, 102, 103) and a detecting m4ans [sic, means] (161, 162, 163) for converting a distortion (vibration) of the el4ctrostrictive [sic, electrostrictive] elements and converting that distortion into an electrical signal" (Office Action, page 2, lines 11-14). Applicants respectfully submit, however, that neither the PTO's characterization of Inoue, nor the disclosure of Inoue itself, include each and every feature recited in claim 1.

That is, the PTO asserted that elements 101, 102 and 103 shown in Inoue's Fig. 4 are electrostrictive elements. Applicants respectfully submit, however, that elements 102, 102 and 103 are actually designated as piezoelectric "transformers" in Inoue, not electrostrictive elements, and the actual output signal of Inoue's piezoelectric "transformers" is a high voltage AC, not a direct current (DC) signal (see Inoue, Col. 3, lines 45-46). Applicants respectfully submit that one of ordinary skill in the art readily understands that piezoelectric and electrostrictive are separate sub-classes of dielectrics that exhibit different behaviors, and as such, the term piezoelectric and electrostrictive are not necessarily interchangeable. For example, Applicants respectfully submit that it is commonly understood that piezoelectric devices can exhibit a mechanical strain when an electrical signal is applied and can generate an electric signal in response to mechanical strain. On the other hand, electrostrictive elements only exhibit mechanical deformation in response to the application of an electrical signal in a non-linear manner.

Even if, *arguendo*, the PTO were to argue that Inoue's piezoelectric "transformers" are also electrostrictive because these elements vibrate in response to the application of an electric driving voltage, Applicants respectfully submit that Inoue's piezoelectrics "amplify" the driving electric voltage signal by converting the vibrational response of the material (based on polarization, arrangement, etc.) into a high voltage AC output signal. The amplified AC electric signal is then input into a voltage step-up rectifier circuit 160. Applicants respectfully submit, however, that the output of these piezoelectric transformers is an AC signal that is already converted

from the vibrations of the piezoelectric. In that manner, Applicants respectfully submit that the step-up voltage rectifier circuit 160, including the diodes 161 and 162 and capacitor 163 does not itself convert any distortion of the piezoelectric elements into an electric signal because the input is already a converted AC electric signal. In that manner, Applicants respectfully submit that the voltage rectifier circuit elements do not correspond to the claimed detecting means.

Moreover, Applicants respectfully submit that there is also no disclosure whatsoever in Inoue with respect to converting an AC signal to a DC signal, as claimed. That is, Inoue does not disclose that the step-up voltage rectifier circuit 160 would then change that already converted AC output signal to a DC signal, and Applicants respectfully submit that one of ordinary skill in the art would recognize that Inoue's step-up voltage rectifier 160 would not necessarily change the input AC waveform into a DC output waveform.

In view of the above, Applicants respectfully submit that Inoue's "piezoelectric transformers" do not correspond to the claimed electrostrictive elements, and that Inoue's step-up voltage rectifier circuit 160 does not itself convert the vibrational distortions from the piezoelectric transformers into an electric signal, much less detect and convert a distortion of an otherwise absent electrostrictive element into an electric signal, specifically a DC electric signal, as claimed. Since Inoue does not disclose each and every feature recited in independent claim 1, Applicants respectfully submit that independent claim 1, and all claims depending therefrom, define patentable subject matter over Inoue. Accordingly, Applicants respectfully request that the above rejection be reconsidered and withdrawn.

For at least the foregoing reasons, Applicants respectfully submit that all claims pending herein define patentable subject matter over the applied references. Accordingly, Applicants respectfully request that the above rejection be reconsidered and withdrawn.

If the Examiner believes that contact with Applicants' attorney would be advantageous toward the disposition of this case, the Examiner is herein requested to call Applicants' attorney at the phone number noted below.

The Commissioner is hereby authorized to charge any additional fees associated with this communication or credit any overpayment to Deposit Account No. 50-1446.

Respectfully submitted,

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Date

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